



The impact of community-based drug and alcohol treatment on re-offending

Joint experimental statistical report from the Ministry of Justice and Public Health England

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Executive Summary

This experimental statistical report contains initial findings from a project that has linked data from the National Drug Treatment Monitoring System (NDTMS) held by Public Health England (PHE) with data on offenders held by the Ministry of Justice (MoJ). The aim of this report is to improve the evidence base of the links between community-based treatment for substance misuse and changes in re-offending.

This ad-hoc release includes key sections on:

- Characteristics associated with offending in the two-years before and after starting treatment (sections 3 and 7);
- The offending profile both before and after starting treatment (section 4 and 5);
- Change in offending (section 6);
- Offending during prison or treatment (section 8).

This report contains initial findings from analysing the final matched dataset to support policy development and is intended to demonstrate the potential utility in linking treatment and offending data. Future publications may follow as our investigations into the links between substance misuse, treatment and re-offending are expanded.

Limitations

One important caveat to note is that approximately 15% of clients starting treatment were excluded from analysis as it was not possible to confidently link treatment and offending records. This report does not therefore cover all drug and alcohol treatment participants in England and it is possible that offences both before and after treatment commenced are omitted from this report. More detail is available in Annex A.

Key findings

Clients commencing treatment in 2012

There were a total of 132,909 clients in the final matched dataset commencing structured drug and alcohol treatment in 2012. Of these, there were 31,251 (24%) opiate clients accessing treatment, 57,892 (44%) alcohol only clients, with an additional 23,307 (18%) non-opiate only and 20,459 (15%) non-opiate and alcohol clients.

Offending status of clients in the two years prior to commencing treatment in 2012

Overall, 46,166 (35%) of those accessing treatment had been recorded as committing at least one offence in the two years immediately prior to accessing treatment in 2012. Opiate clients had the highest prevalence, with 47% of those starting treatment in 2012 having a recorded offence in the previous two years. This was followed by non-opiate clients (43%), non-opiate plus alcohol clients (41%) and alcohol only clients (23%).

It is possible that some of those that didn't have a recorded offence in the two years prior to starting treatment may have had one or more convictions prior to this time, but this was outside of the scope of this report and will be addressed in future analysis.

A total of 128,833 offences were recorded by these clients in the two-year period prior to the start of treatment. Opiate clients had a disproportionate level of offending recorded: they constituted 32% of all pre-treatment offenders but accounted for 41% of their recorded offences.

The four most prevalent offending categories constituted two-thirds of all offences in the two years prior to treatment, and include: summary offences excluding motoring (27% of offences); theft from shops (18%); breaches of court orders (13%) and drug offences (11%).

Theft from shops was the most prevalent offence for opiate clients (30% of offences), while summary offences excluding motoring was the most prevalent offence for both alcohol only clients (43%), alcohol and non-opiate clients (36%), and non-opiate clients (23%).

Change in offending in the two-year period following the start of treatment

In the two-year period following the start of treatment 25,876 went on to re-offend, i.e. 56% of pre-treatment offenders. There were 86,513 offences recorded; a reduction of 33% in offences.

Opiate clients showed the smallest decreases in both re-offenders (a reduction of 31%) and re-offending (a reduction of 21%). Alcohol only clients showed the largest reductions in both re-offenders and re-offending (59% and 49%, respectively).

Factors associated with offending

For both pre-treatment offending and post-treatment re-offending, after controlling for other characteristics it was found that males, those from Black and Ethnic Minorities, those who are homeless and those with a current or lifetime history of injecting drugs are more likely to offend; while those who are older or are in treatment for substances other than opiates are less likely to offend. Clients who had been in prison prior to starting treatment and those who re-presented to treatment were more likely to re-offend. Clients who successfully completed treatment or were still in treatment at the end of the period were less likely to re-offend.

Section 1: Introduction

This report is a joint publication between the Ministry of Justice (MoJ) and Public Health England (PHE). MoJ and PHE entered into a data sharing agreement to inform policy across both departments. This data share will support specific policies and help broaden the evidence base more generally around those individuals in contact with MoJ and PHE.

The overall aim of the matched MoJ-PHE data linkage project is to gain a better understanding of the drugs and alcohol needs amongst offenders and the impact that any treatment or programmes have on reducing re-offending. This report includes initial findings from the 2016 data share linking offending data held by MoJ with alcohol and drug treatment data held by PHE. This provides insight into the relationships between the personal, treatment and offending histories of a cohort of offenders and subsequent re-offending.

The outputs of this report will also form a part of PHE's new Social Return on Investment (SROI) tool, which helps Local Authorities demonstrate the social and economic benefits of local investment in alcohol and drug prevention, treatment and recovery interventions. A significant portion of this tool relies on proven offending data to assess changes in offending behaviour following treatment and to estimate the number of people in sustained recovery (defined as leaving treatment free of dependency and not re-presenting to treatment and/or committing an alcohol/ drug-related offence).

PHE are developing reports for Police and Crime Commissioners who are responsible for securing efficient and effective policing in their respective jurisdictions. As offending is known to be associated with problematic alcohol and drug use it is important to raise awareness of the importance of treatment in reducing offending.

Section 2: Overview of PHE-MoJ data share

PHE manage the National Drug Treatment Monitoring System (NDTMS), a repository of all alcohol and drug treatment data on clients accessing publicly funded treatment in England. Alongside demographics, NDTMS records other important information such as the substance(s) clients are accessing treatment for, injecting behaviour, and treatment outcome. More information on NDTMS can be found here: <http://www.nta.nhs.uk/core-data-set.aspx>. National statistics are reported annually. The latest year reported is 2015/16 and is available here: [http://www.nta.nhs.uk/uploads/adult-statistics-from-the-national-drug-treatment-monitoring-system-2015-2016\[0\].pdf](http://www.nta.nhs.uk/uploads/adult-statistics-from-the-national-drug-treatment-monitoring-system-2015-2016[0].pdf).

MoJ hold the Police National Computer (PNC) and data from magistrates' courts, prisons and probation services. These datasets include information such as the date and type of offence, whether the sentence was community-based or custodial, and the associated dates of periods in custody where applicable. The Justice Statistics Analytical Services within MoJ developed a combined dataset from all of these sources to which NDTMS was linked.

The last full year for which PNC data was available at the time of data matching was up to December 2014. To provide the most up-to-date estimates of the impact of treatment on re-offending, clients commencing community treatment in 2012 were selected. Offending in the two years preceding treatment initiation was compared with offending in the two years following treatment initiation.

A total of 157,066 clients entered community drug and alcohol treatment services in England in 2012. After data matching (see Annex A), a cohort of 132,909 clients (85% of the original cohort) remained for further analyses. This reduction was caused by instances where there was uncertainty in the matching procedure, such as identifying two potential offenders who matched a single person accessing treatment.

Standard NDTMS reporting protocols separate clients into one of four substance-using categories (see Annex B). Opiate clients accounted for 31,251 (24%) of those starting treatment in 2012, and among those not using opiates there were 57,892 (44%) accessing treatment for alcohol only, 23,307 (18%) accessing treatment for non-opiates and alcohol (non-opiates is a term used to define any drug that is not an opiate) and 20,459 (15%) accessing treatment for non-opiates only.

Section 3: Factors associated with offending in the two years prior to starting treatment

Of the 132,909 clients in the final matched dataset accessing treatment in 2012, a total of 46,166 (35%) were recorded as committing at least one offence in the two years prior to treatment. The remaining 65% of those starting drug and alcohol treatment had no recorded offences in the two years before commencement. It is possible that offending had occurred in this cohort in the two years before commencement, but it was either not recorded or we were unable to match the individual between the two datasets. Offences may have been recorded before this time, but this is out of the scope of the current report and will be addressed in future analysis.

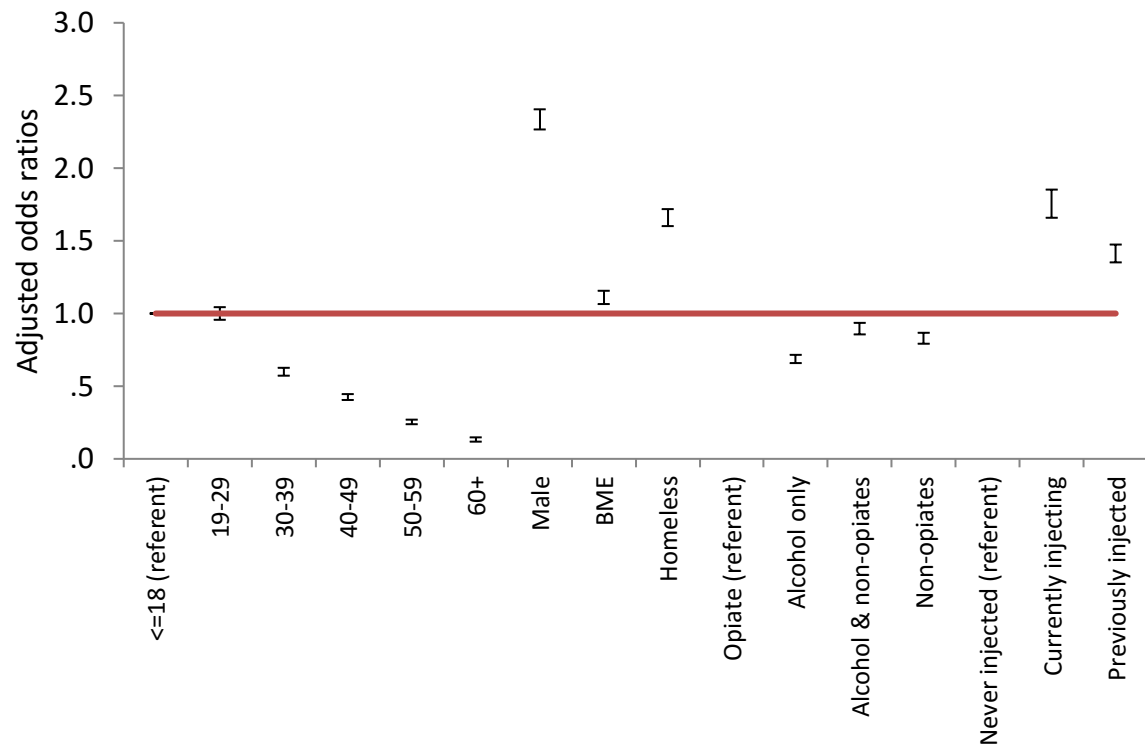
Clients presenting to treatment are categorised by the substances they cite as problematic at the start of treatment (see Annex B). Opiate clients had the highest prevalence of being an offender during this period (47% had offended; n=14,646), followed by non-opiate only clients (43.4%; n=8,886), and alcohol and non-opiates clients (40.6%; n=9,470). Alcohol only clients had the lowest prevalence of being an offender (22.7%; n=13,164).

The strength of associations between client-level characteristics and the likelihood of having been recorded as being an offender offending prior to starting treatment can be assessed using a statistical model known as a logistic regression. This approach allows for multiple variables to be simultaneously compared together to see which ones are the most likely to be associated with prior offending after controlling for the other characteristics. The characteristics included in the analysis were the age of the client at the start of treatment, their gender, ethnicity, the broad substance group for which they were accessing treatment and their injecting status (never injected, previously injected, currently injecting). The model measures associations between client characteristics and the likelihood of having offended prior to starting treatment. It produces 'odds ratios', which quantify the relative likelihood that a client with a particular characteristic rather than another characteristic was a pre-treatment offender. For example, the model shows that males are nearly 2.5 times more likely than females to have offended prior to treatment.

Figure 1 presents the results from this model. Characteristics with confidence intervals appearing above the red line indicate that the characteristic is associated with an increased likelihood of offending, while confidence intervals appearing below the line indicate a lowered likelihood.

Clients who were aged between 19 and 29 years at the start of treatment were no less likely than those aged 18 or less to have an offence recorded, but each successive age band were less and less likely than those aged 18 or less to have an offence recorded. Males, clients with a Black and Minority Ethnicity, those who were homeless or with a current or lifetime history of injecting were more likely to offend. Conversely, clients accessing treatment were less likely to offend if they were female, housed, and had never injected. All three other client substance groups were less likely than opiate clients to have a recorded offence in the period.

Figure 1: Associations between client-level characteristics and the likelihood of having a recorded offence in the two years prior to starting treatment



Section 4: Offending profile in the two years prior to starting treatment

The PNC records over 3,000 offence codes and, of these, 602 were recorded for the offenders in the final matched dataset. These codes were aggregated into 20 offending categories (see Supplementary Tables for coding). These categories are different to those used by MoJ and other criminal justice agencies, but they are better related to drug and alcohol- related offending and will be useful when reporting at Local Authority level. Table 1 presents the 128,333 offences recorded in the two years prior to the start of treatment in 2012.

The most prevalent offending category was summary offences excluding motoring, accounting for 34,385 (27%) of offences prior to the start of treatment. Theft from shops accounted for 18% of all offences, breaches of court orders and drug offences made up 13% and 11% of offences respectively. The other offending categories accounted for no more than 6% of all offences.

Table 1: Recorded offences in the two years prior to starting treatment in 2012

	Opiates	Alcohol only	Alcohol & non-opiates	Non-opiates only	Total
Violence against the person	834 (1.6%)	1,303 (4.5%)	879 (3.5%)	564 (2.5%)	3,580 (2.8%)
Sexual offences	36 (0.1%)	136 (0.5%)	72 (0.3%)	49 (0.2%)	293 (0.2%)
Robbery	238 (0.5%)	114 (0.4%)	489 (2.0%)	489 (2.2%)	1,330 (1.0%)
Burglary in a dwelling	1,268 (2.4%)	191 (0.7%)	623 (2.5%)	755 (3.4%)	2,837 (2.2%)
Burglary in a building other than a dwelling	1,285 (2.4%)	205 (0.7%)	458 (1.8%)	532 (2.4%)	2,480 (1.9%)
Theft of a vehicle	336 (0.6%)	112 (0.4%)	284 (1.1%)	339 (1.5%)	1,071 (0.8%)
Theft from a vehicle	871 (1.7%)	79 (0.3%)	175 (0.7%)	242 (1.1%)	1,367 (1.1%)
Theft from shops	15,483 (29.5%)	2,994 (10.3%)	2,247 (9.1%)	1,877 (8.3%)	22,601 (17.5%)
Other theft	2,315 (4.4%)	735 (2.5%)	1,126 (4.5%)	1,217 (5.4%)	5,393 (4.2%)
Criminal damage and arson	206 (0.4%)	335 (1.2%)	366 (1.5%)	237 (1.1%)	1,144 (0.9%)
Drug offences	4,790 (9.1%)	825 (2.8%)	2,892 (11.7%)	5,169 (23.0%)	13,676 (10.6%)
Possession of weapons	742 (1.4%)	467 (1.6%)	515 (2.1%)	433 (1.9%)	2,157 (1.7%)
Public order offences	969 (1.8%)	1,112 (3.8%)	673 (2.7%)	408 (1.8%)	3,162 (2.5%)
Miscellaneous crimes against society	4,074 (7.8%)	1,137 (3.9%)	1,151 (4.6%)	1,273 (5.7%)	7,635 (5.9%)
Fraud offences	501 (1.0%)	196 (0.7%)	128 (0.5%)	192 (0.9%)	1,017 (0.8%)
Summary offences excluding motoring	7,893 (15.0%)	12,322 (42.5%)	8,951 (36.1%)	5,219 (23.2%)	34,385 (26.7%)
Summary offences excluding motoring - begging	334 (0.6%)	51 (0.2%)	46 (0.2%)	63 (0.3%)	494 (0.4%)
Summary offences excluding motoring - prostitution related	149 (0.3%)	7 (0.0%)	5 (0.0%)	16 (0.1%)	177 (0.1%)
Summary motoring offences	891 (1.7%)	736 (2.5%)	515 (2.1%)	540 (2.4%)	2,682 (2.1%)
Summary motoring offences related to drink- or drug-driving	360 (0.7%)	2,665 (9.2%)	565 (2.3%)	240 (1.1%)	3,830 (3.0%)
Unknown	8 (0.0%)	0 (0.0%)	1 (0.0%)	0 (0.0%)	9 (0.0%)
Offences outside England & Wales	222 (0.4%)	66 (0.2%)	20 (0.1%)	26 (0.1%)	334 (0.3%)
Breach offences	8,757 (16.7%)	3,207 (11.1%)	2,599 (10.5%)	2,616 (11.6%)	17,179 (13.3%)
Total offences	52,562 (100%)	28,995 (100%)	24,780 (100%)	22,496 (100%)	128,833 (100%)
Total offenders	14,646	13,164	9,470	8,886	46,166
Average number of offences per offender	3.6	2.2	2.6	2.5	2.8

A third (32%) of all offenders were opiate clients (n=14,646) and, with an average of 3.6 offences per offender, they were responsible for 41% of all recorded offences. The most frequent offending category for opiate clients was theft from shops (30%), followed by breaches of a court order (17%).

Alcohol only clients made up 29% of offenders but only caused 23% of the offences. The most prevalent offence type for these clients was summary offences excluding motoring (43%), which was also the most prevalent offence type for alcohol & non-opiate clients (36%) and non-opiate clients (23%) although non-opiate only clients also had a similar level of drug offences recorded against them

Section 5: Offending profile in the two years following start of treatment

This report investigates the re-offending behaviour of clients who had been offending in the two years prior to starting treatment (i.e. 46,166 clients). In the two year period following the start of treatment, 25,876 of these clients re-offended, which reflects a reduction of 44% (see Table 2), accounting for 86,513 offences.

Table 2: Recorded offences in the two years following the start of treatment in 2012

	Opiates	Alcohol only	Alcohol & non-opiates	Non-opiates only	Total
Violence against the person	643 (1.6%)	838 (5.7%)	606 (3.8%)	414 (2.8%)	2,501 (2.9%)
Sexual offences	18 (0.0%)	60 (0.4%)	30 (0.2%)	37 (0.3%)	145 (0.2%)
Robbery	276 (0.7%)	73 (0.5%)	218 (1.4%)	263 (1.8%)	830 (1.0%)
Burglary in a dwelling	1,054 (2.6%)	91 (0.6%)	399 (2.5%)	421 (2.9%)	1,965 (2.3%)
Burglary in a building other than a dwelling	1,056 (2.6%)	116 (0.8%)	253 (1.6%)	337 (2.3%)	1,762 (2.0%)
Theft of a vehicle	314 (0.8%)	43 (0.3%)	176 (1.1%)	192 (1.3%)	725 (0.8%)
Theft from a vehicle	610 (1.5%)	35 (0.2%)	115 (0.7%)	164 (1.1%)	924 (1.1%)
Theft from shops	15,399 (37.3%)	1,969 (13.4%)	1,710 (10.7%)	1,528 (10.5%)	20,606 (23.8%)
Other theft	1,551 (3.8%)	288 (2.0%)	570 (3.6%)	647 (4.4%)	3,056 (3.5%)
Criminal damage and arson	109 (0.3%)	120 (0.8%)	126 (0.8%)	83 (0.6%)	438 (0.5%)
Drug offences	2,730 (6.6%)	415 (2.8%)	1,498 (9.4%)	2,281 (15.7%)	6,924 (8.0%)
Possession of weapons	439 (1.1%)	174 (1.2%)	294 (1.8%)	237 (1.6%)	1,144 (1.3%)
Public order offences	833 (2.0%)	921 (6.3%)	554 (3.5%)	337 (2.3%)	2,645 (3.1%)
Miscellaneous crimes against society	2,864 (6.9%)	632 (4.3%)	839 (5.3%)	913 (6.3%)	5,248 (6.1%)
Fraud offences	272 (0.7%)	78 (0.5%)	78 (0.5%)	89 (0.6%)	517 (0.6%)
Summary offences excluding motoring	5,179 (12.5%)	5,548 (37.7%)	5,074 (31.9%)	3,391 (23.3%)	19,192 (22.2%)
Summary offences excluding motoring - begging	412 (1.0%)	26 (0.2%)	25 (0.2%)	42 (0.3%)	505 (0.6%)
Summary offences excluding motoring - prostitution related	68 (0.2%)	1 (0.0%)	1 (0.0%)	7 (0.0%)	77 (0.1%)
Summary motoring offences	525 (1.3%)	233 (1.6%)	308 (1.9%)	344 (2.4%)	1,410 (1.6%)
Summary motoring offences related to drink- or drug-driving	121 (0.3%)	366 (2.5%)	142 (0.9%)	82 (0.6%)	711 (0.8%)
Unknown	2 (0.0%)	5 (0.0%)	8 (0.1%)	8 (0.1%)	23 (0.0%)
Offences outside England & Wales	110 (0.3%)	32 (0.2%)	32 (0.2%)	31 (0.2%)	205 (0.2%)
Breach offences	6,731 (16.3%)	2,664 (18.1%)	2,870 (18.0%)	2,695 (18.5%)	14,960 (17.3%)
Total offences	41,316 (100%)	14,728 (100%)	15,926 (100%)	14,543 (100%)	86,513 (100%)
Total offenders	10,159	5,440	5,301	4,976	25,876
Average number of offences per offender	4.1	2.7	3	2.9	3.3

The most prevalent offending category in the two years following the start of treatment was theft from shops, with 20,606 recorded offences (24% of all offences in this period). Summary offences excluding motoring became the second most prevalent category with 19,192 offences (22%), while breaches of a court order remained the third most prevalent category (14,960 offences [17%]).

Table 3 reports the percentage change in recorded offences. With a reduction of 81%, recorded offences in the summary motoring offences related to drink- or drug-driving

category showed the greatest proportional decrease. Opiate clients had a minimal reduction in theft from shop offences recorded, with a decrease of 1%.

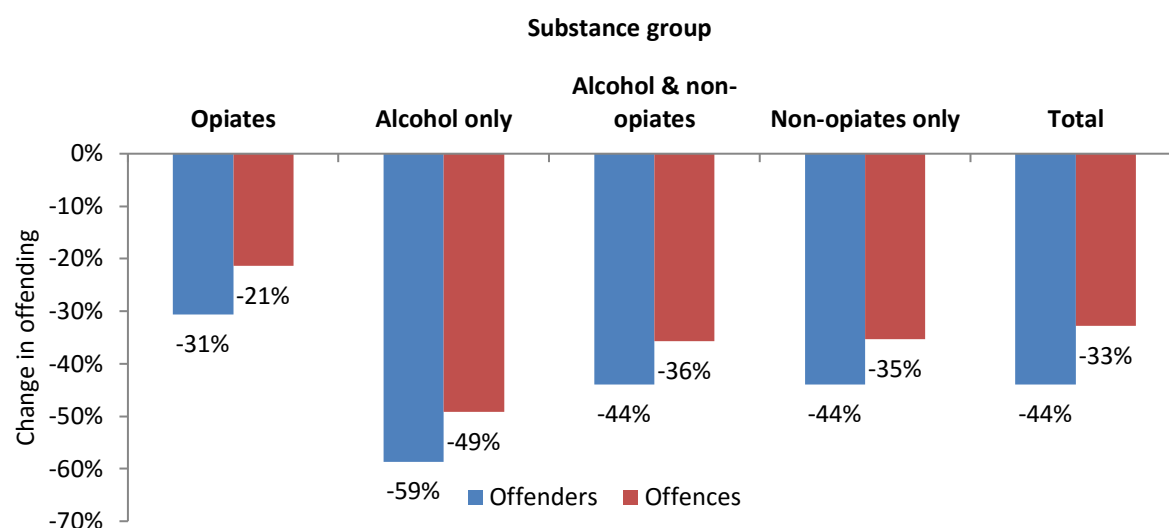
There was an increase in some offending categories: opiate clients show an increase of 16% robbery offences and alcohol and non-opiate clients and non-opiate only clients had a 10% and 3% increase in breaches of court orders respectively.

Table 3: Percentage change in offending categories by treatment type

	Opiates	Alcohol only	Alcohol & non-opiates	Non-opiates only	Total
Violence against the person	-23%	-36%	-31%	-27%	-30%
Sexual offences	-50%	-56%	-58%	-24%	-51%
Robbery	16%	-36%	-55%	-46%	-38%
Burglary in a dwelling	-17%	-52%	-36%	-44%	-31%
Burglary in a building other than a dwelling	-18%	-43%	-45%	-37%	-29%
Theft of a vehicle	-7%	-62%	-38%	-43%	-32%
Theft from a vehicle	-30%	-56%	-34%	-32%	-32%
Theft from shops	-1%	-34%	-24%	-19%	-9%
Other theft	-33%	-61%	-49%	-47%	-43%
Criminal damage and arson	-47%	-64%	-66%	-65%	-62%
Drug offences	-43%	-50%	-48%	-56%	-49%
Possession of weapons	-41%	-63%	-43%	-45%	-47%
Public order offences	-14%	-17%	-18%	-17%	-16%
Miscellaneous crimes against society	-30%	-44%	-27%	-28%	-31%
Fraud offences	-46%	-60%	-39%	-54%	-49%
Summary offences excluding motoring	-34%	-55%	-43%	-35%	-44%
Summary offences excluding motoring - begging	23%	-49%	-46%	-33%	2%
Summary offences excluding motoring - prostitution related	-54%	-86%	-80%	-56%	-56%
Summary motoring offences	-41%	-68%	-40%	-36%	-47%
Summary motoring offences related to drink- or drug-driving	-66%	-86%	-75%	-66%	-81%
Unknown	-75%	n/a	700%	n/a	156%
Offences outside England & Wales	-50%	-52%	60%	19%	-39%
Breach offences	-23%	-17%	10%	3%	-13%
Total offences	-21%	-49%	-36%	-35%	-33%
Total offenders	-31%	-59%	-44%	-44%	-44%

Figure 2 presents the overall changes in recorded offending following the start of treatment broken down by substance category. As stated, 44% of clients did not re-offend in this period, and this resulted in the number of recorded offences decreasing by 33%. Opiate clients had the lowest percentage change in recorded offenders and offences (31% and 21%, respectively), while the alcohol only client group experienced the greatest reduction in both offenders and offences (59% and 49%, respectively).

Figure 2: Reduction in re-offending in the two-years following the start of treatment, by substance group



When comparing Table 1 and Table 2, the number of offences per those with a recorded offence, increased from 2.8, in the pre-treatment period, to 3.3 in the period following the start of treatment.

Figure 3 presents the frequency of recorded offences in the two-year pre-treatment and two-year post-treatment periods, grouped by the number of offences recorded against a client. There was a 55% reduction in clients with one offence recorded against them, a 45% reduction in clients with two offences recorded against them, and this decreasing trend generally continues. There was a reduction of only 0.3% in the number of clients with 15 or more offences recorded against them.

Figure 3: Change in frequency of offences by severity of offending

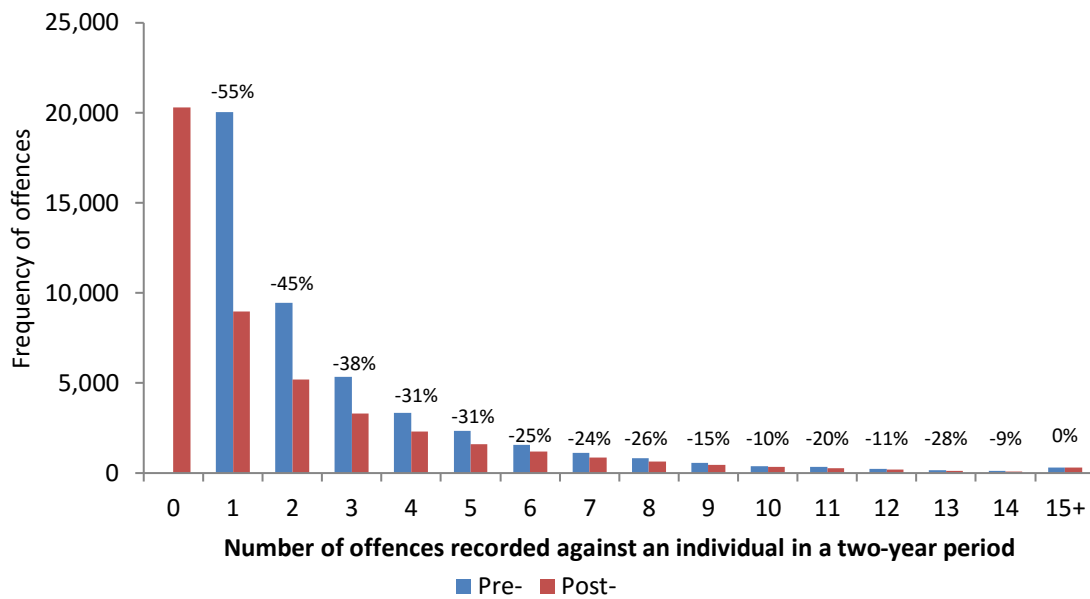
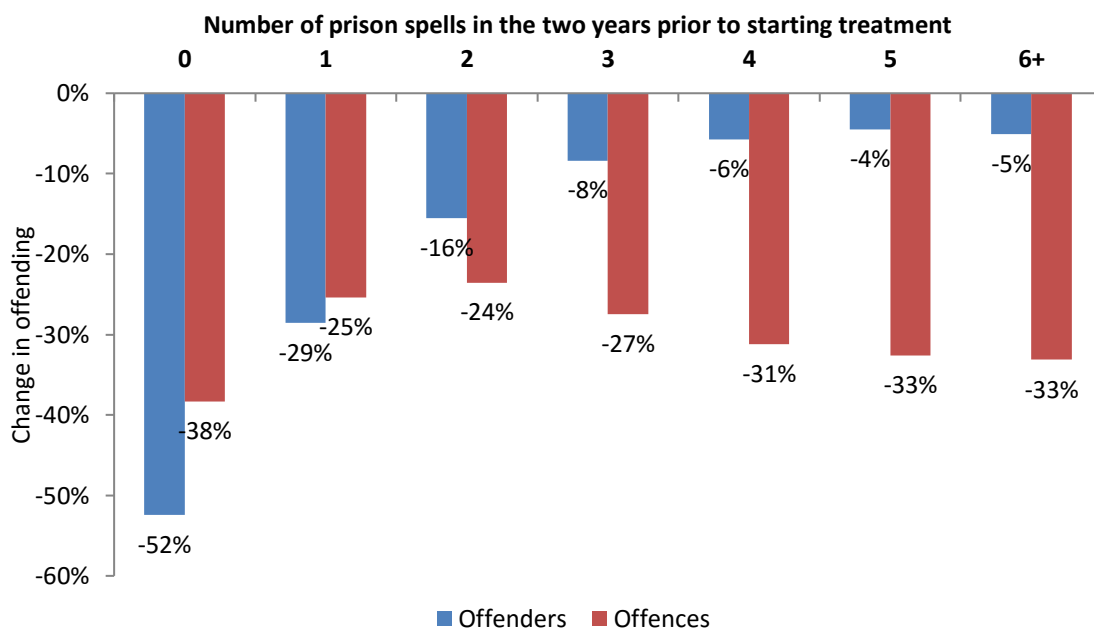


Figure 4 presents the change in offending, for both number of offenders and number of offences, by the number of prison spells served by clients in the two years prior to starting treatment. The greatest reduction in re-offending is seen in those clients who were not in prison in the two years before treatment. As the number of prison spells for each client increased, there is a greater chance of re-offending post commencement of treatment. For example, only 5% of offenders who had six or more prison spells did not re-offend in the two years following the start of treatment. It is interesting to note, however, that there was still a reduction of 33% in the number of offences for these offenders, implying that while they re-offended, they did so at a much lower rate.

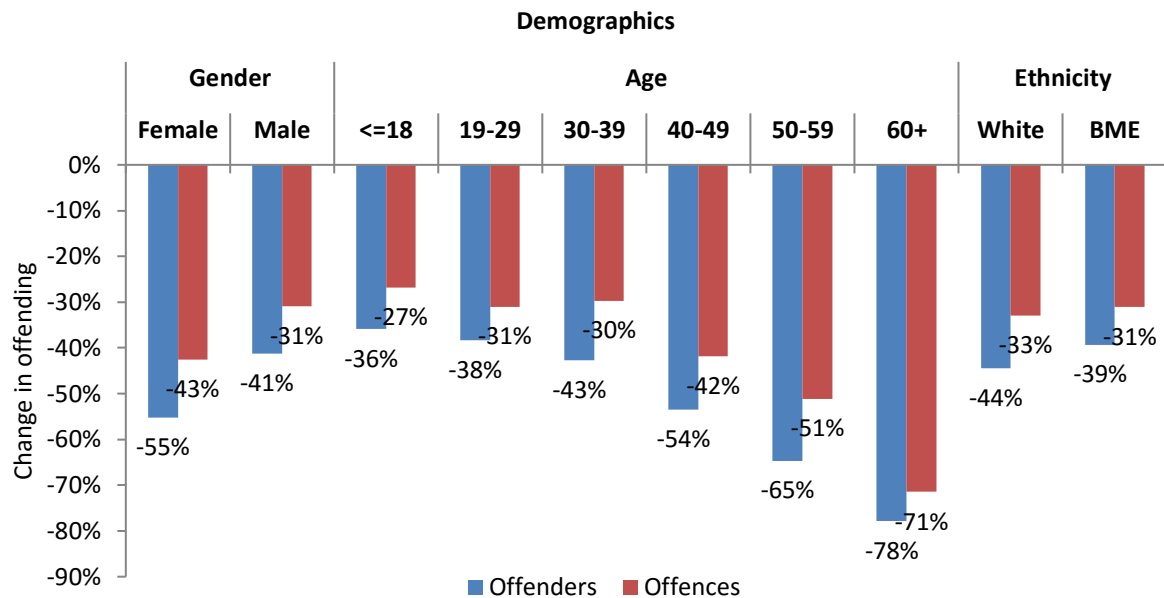
Figure 4: Change in offending by number of pre-treatment prison spells



Section 6: Change in offending by demographics and treatment discharge status

Figure 5 reports changes in offending, broken down by client demographics of gender, age and ethnicity. Females had a greater reduction in both offenders and offences than their male counterparts. As the age of clients increased there was a corresponding reduction in both offenders and offences.

Figure 5: Reduction in offending in the two-years following the start of treatment, by demographics



There is a wide variation in offending behaviour when considering the treatment status at the end of the two-year period. Figure 6 focuses on opiate clients as they showed the smallest reduction in offending as a group. Opiate clients with an unplanned exit, i.e. who 'dropped out', of the treatment they began in 2012, were the least likely to see a change in their recorded offending. Only 20% of those who dropped out did not re-offend in the two year period (with a reduction of 10% in offences). In contrast to this, 44% of those who successfully completed treatment and 46% of those who were still engaged in treatment did not re-offend in the period. Clients still in treatment had a reduction in the number of offences of 47%.

Figure 6: Reduction in offending in the two-years following the start of treatment for opiate clients, by discharge status

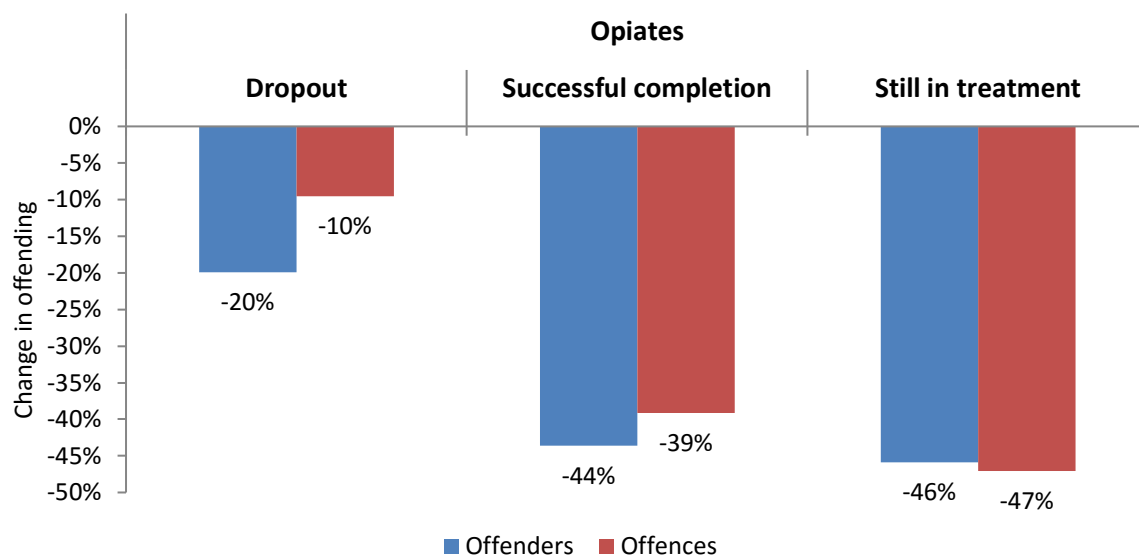


Table 4 shows the association between treatment status at the end of the two years and re-offending for opiates and the other three substance groups (alcohol only, alcohol and non-opiates and non-opiates only). For every substance group, clients who successfully complete treatment are less likely to re-offend compared to those who drop out of treatment. Unlike their opiate client counterparts, however, clients from the other three substance groups who are still in treatment at the end of the period do not show a greater reduction in offending relative to those who successfully complete treatment. Both alcohol only and alcohol and non-opiate clients who drop out of treatment have seen a greater reduction in re-offences than those still in treatment. Those still in treatment for these substances at the end of the two years may have the most entrenched use to need that length of treatment exposure, which is also reflected in their smaller reductions in re-offences.

Table 4: Reduction in re-offending in the two-years following the start of treatment, by discharge status

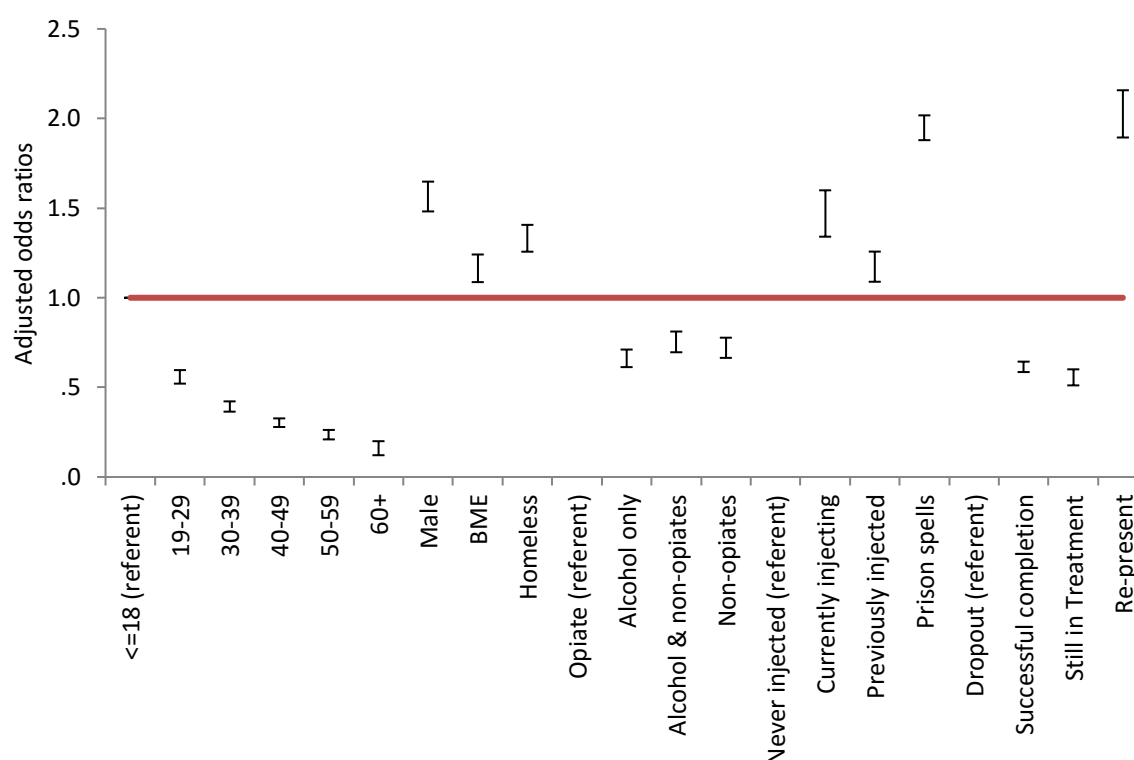
		Offenders		Offences		Change	
		Pre-	Post-	Pre-	Post-	Offenders	Offences
Opiates	Dropout	8,401	6,727	34,509	31,230	-20%	-10%
	Successful completion	2,393	1,349	6,640	4,042	-44%	-39%
	Still in treatment	3,852	2,083	11,413	6,044	-46%	-47%
Alcohol only	Dropout	5,560	2,654	13,698	8,082	-52%	-41%
	Successful completion	7,394	2,705	14,907	6,410	-63%	-57%
	Still in treatment	210	81	390	236	-61%	-39%
Alcohol & non-opiates	Dropout	3,610	2,216	10,640	7,503	-39%	-29%
	Successful completion	5,678	2,980	13,710	8,093	-48%	-41%
	Still in treatment	182	105	430	330	-42%	-23%
Non-opiates only	Dropout	3,151	2,037	9,208	6,901	-35%	-25%
	Successful completion	5,632	2,884	13,011	7,468	-49%	-43%
	Still in treatment	103	55	277	174	-47%	-37%
Total	Dropout	20,722	13,634	68,055	53,716	-34%	-21%
	Successful completion	21,097	9,918	48,268	26,013	-53%	-46%
	Still in treatment	4,347	2,324	12,510	6,784	-47%	-46%

Section 7: Factors associated with offending in the two years following the start of treatment

In general, the factors associated with offending in the two years following the start of treatment are the same as those associated with offending in the two years prior to the start of treatment: males, Black and Ethnic Minorities, those who are homeless and those with a current or lifetime history of injecting drugs are more likely to re-offend, while those who are older or are in treatment for drugs other than opiates are less likely to re-offend after controlling for the other characteristics (see Figure 7).

This model, similar to that employed in section 3, allows for inclusion of extra important variables, such as whether a person was detained in prison prior to starting treatment in 2012; what the discharge status of the treatment was, and whether or not a person re-presented to treatment following discharge. Clients who had been in prison and clients who re-presented to treatment were found to be around twice as likely to re-offend, while clients who either completed treatment or were still in treatment at the end of the period were less likely to offend.

Figure 7: Associations between client-level characteristics and the likelihood of having a recorded offence in the two years following the start of treatment



Section 8: Offending during prison or treatment states

The final matched dataset includes dates which indicate when a client entered and exited prison, and when they started and finished treatment. From these it is possible to determine whether an offence occurred when a client was engaged in treatment, was detained in prison, or was in neither of these states. It is also possible to derive, in a small minority of cases, whether a client was both in treatment and in prison on the date the offence occurred. See Annex A for more detail on the cross-over of prison and treatment spells.

It is possible to standardise the offending in each of the four states (i.e. treatment, prison, neither, both) by calculating the amount of time each client had in each state – both before and after the 2012 treatment start date – and deriving the number of offences occurred per person year (PPY). So for example if a person was in treatment for six months and had two offences recorded during this time their offences per person year would be four. This is a different methodological approach to that used in tables 1. and 2. where the average number of offences per person is reported. Therefore, the figures in this section will not match those in earlier tables. It should also be noted that the offences PPY method includes all clients in the two years after starting treatment and not just those that continue to offend as in reported in table 2.

This is important as this analysis builds in the amount of time that a client has available to potentially commit a crime. For example if someone was in prison for a large proportion of the two years after starting treatment, their likelihood of offending will be substantially reduced compared to if they were still in the community.

Figure 8 reports the standardised offending per person year in each of the four states available for clients starting treatment in 2012. The greatest reduction in offences PPY occurred for clients who were engaged in treatment. In the two years prior to the 2012 treatment start date, clients in treatment had 2.1 offences recorded against them PPY, and this decreased to 1.3 offences PPY for clients in treatment after 2012. Offences for clients detained in prison remained stable, at around 0.6 offences PPY. For clients who were recorded as being both in treatment and prison, offences PPY increased from 2.8 to 3.1, and for those who were not in either state, offences dropped from 1.3 to 0.7 PPY. In total, offences PPY decreased from 1.4 to 0.9, a decrease of nearly 36%.

Figure 8: Offences per person year for all clients starting treatment in 2012

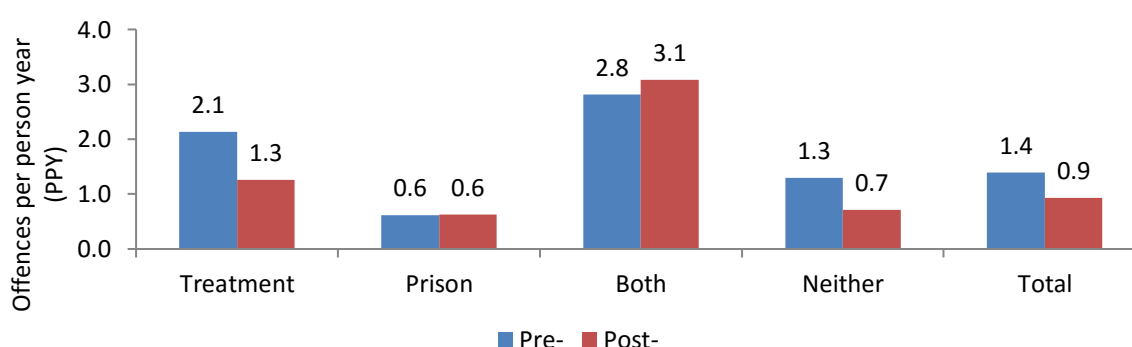


Table 5 includes a breakdown of offending PPY in each of these states by substance group. Overall, opiate clients had 1.8 offences PPY recorded against them in the two-years prior to starting treatment in 2012 and this decreased to 1.4 recorded offences PPY in the subsequent two-year period. For alcohol only clients, recorded offences decreased from 1.1 PPY to 0.6 PPY. For both non-opiate and alcohol clients and non-opiate only clients, recorded offences decreased from 1.3 PPY to 0.8 PPY. The change in each state does not appear to vary significantly by substance type.

Table 5: Offending per person year by substance group and treatment or prison state

Substance group	State	Pre-	Post-
Opiates	Treatment	2.4	1.6
	Prison	0.5	0.6
	Both	3.0	3.3
	Neither	1.7	1.2
	Total	1.8	1.4
Alcohol only	Treatment	1.2	0.7
	Prison	1.0	0.8
	Both	2.4	2.8
	Neither	1.1	0.5
	Total	1.1	0.6
Non-opiates & alcohol	Treatment	1.6	1.1
	Prison	1.0	0.7
	Both	2.7	2.7
	Neither	1.3	0.7
	Total	1.3	0.8
Non-opiates only	Treatment	2.0	1.2
	Prison	0.7	0.5
	Both	2.9	2.7
	Neither	1.3	0.7
	Total	1.3	0.8

Supplementary tables

Supporting tables can be found accompanying this publication. These tables provide detailed information on the categorisation of offence codes that have been used in Tables 1 and 2. Also available are global changed in offending at Local Authority and Police Force Area.

Annex A – data matching methodology and matching results

Data matching methodology

PHE holds information about clients who are receiving structured treatment for drug and alcohol dependency in England in the National Drug Treatment Monitoring System (NDTMS). NDTMS is collected in the community and in prisons through two separate data streams. The data matching exercise to MoJ data sources¹ encompassed both settings; however the focus of this report is on the NDTMS community dataset.

MoJ have undertaken data matching exercises with other organisations, including DWP/HMRC, which have relied on a sequential set of matching rules. These have included common variables such as first name and last name. A challenge with matching NDTMS to MoJ data sources was that the NDTMS only includes the initials for each client. No common identifier is recorded on both MoJ data sources and the NDTMS community dataset (although P-NOMIS, a prison identifier, is recorded on both MoJ and the NDTMS prison dataset). However, sufficient record-level information is recorded on both data sources for PHE to match MoJ data sources to information about clients receiving structured treatment for drug or alcohol dependency.

Data flow for linkage procedure

PHE's confidentiality toolkit is explicit on linkage of the NDTMS with other national administrative databases. It states the following:

“All data matching is conducted by Public Health England, and at no point is any identifiable information about clients passed onto other government departments”

PHE and MoJ designed a system that would allow for the transfer of data from MoJ to PHE without disclosing information that is not pertinent to this match (i.e. the data being shared is proportionate to the need). This ensured that the confidential details of clients accessing treatment were not disclosed to MoJ. The process documented in Figure 9 was agreed by PHE's Caldicott Guardian, the Office for Data Release and the legal team. The Data Assurance Compliance Unit and legal team at MoJ also agreed to the process. Analysts within PHE conducted the match in line with the NDTMS confidentiality statement (<http://www.nta.nhs.uk/uploads/ndtmsconfidentialitytoolkitv6.3.pdf>).

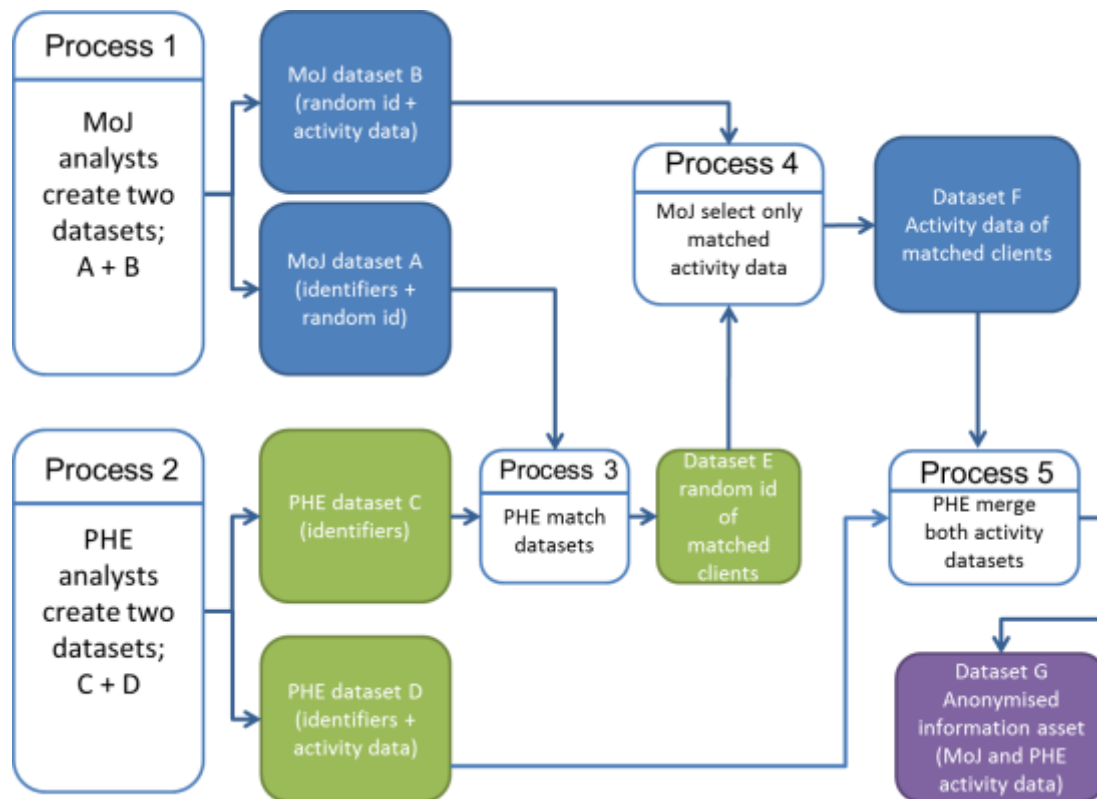
MoJ analysts created Dataset A (offender identifiers, together with a unique random identifier), and Dataset B (the random identifier plus all offending activity data). PHE analysts created Dataset C (NDTMS client identifiers) and Dataset D (NDTMS client identifiers plus all treatment activity data).

MoJ securely transferred Dataset A to PHE and deleted Dataset A from their network. PHE analysts matched Dataset A with Dataset C, to create Dataset E, which contained

¹ NDTMS data was matched to offending information from the Police National Computer (PNC) and magistrates' courts. The analysis in this publication is solely based on the matches between the NDTMS and PNC.

only the random identifier of offenders who had a matched treatment activity record. PHE transferred Dataset E back to MoJ, allowing them to extract the relevant offending activity data from Dataset B, which formed Dataset F. This dataset was securely transferred to PHE and PHE analysts merged this dataset with Dataset D to create the final matched dataset used for analysis.

Figure 9: Process flow for MoJ-PHE data share



Variables used in the data linkage

The five key variables available in both the community NDTMS and PNC offending data are:

- 1) first name initial
- 2) surname initial
- 3) date of birth
- 4) gender
- 5) Local Authority or local area

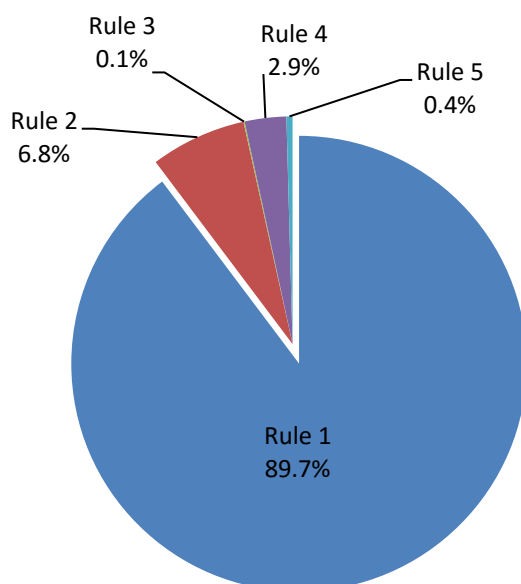
Five matching rules were considered in sequence by the matching programme (Table 6). Only when one rule did not link with a client did the subsequent rule get activated.

Table 6: Linkage rules

Rule	Rule definition
1	Match on all five key variables, considered the strongest available
2	Where a link could not be made based on Rule 1, the matching algorithm then moved to Rule 2 in which 'alias' initials (from the Police National Computer) were used in place of 'real' initials.
3	Switch the day and month of birth to allow for potential data entry error (e.g. 01/02/1981 would have been changed to 02/01/1981).
4	Utilise Police Force Area (PFA) in place of the Local Authority (LA) of residence (matching the PFA where the offence was recorded to the Local Authority of community NDTMS treatment was considered to be a sufficiently robust means of accounting for the location of an offender/treatment participant)
5	Exclude gender from the matching

Figure 10 shows that almost 90% of offenders in the final matched dataset were matched using rule 1 (the strongest of the matching rules which relies on matching on all five common variables).

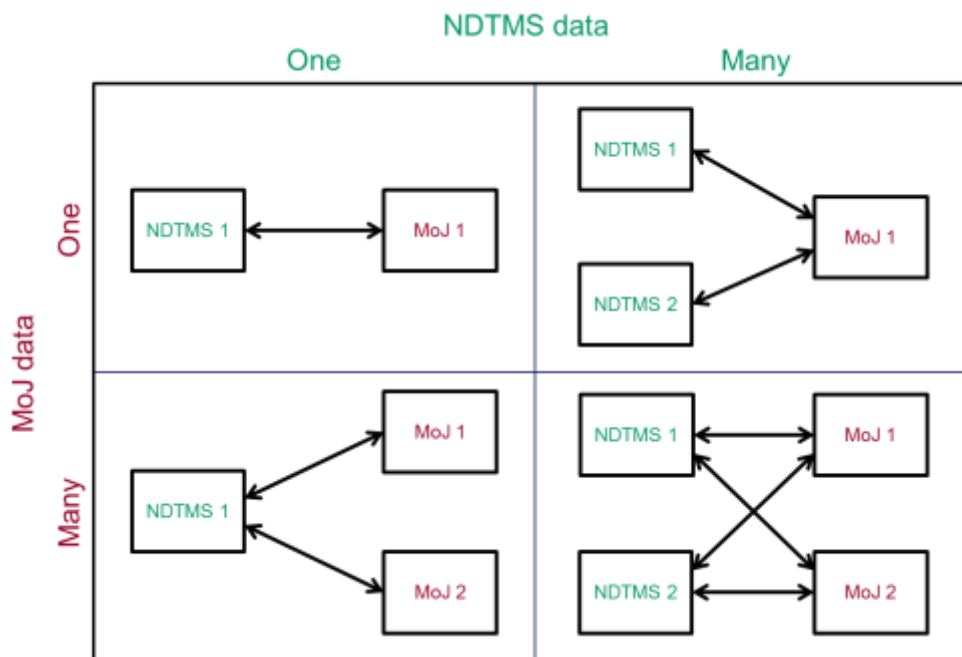
Figure 10: Matching rules utilised in the 46,166 pre-treatment offenders



Initial matching results

There were four linkage types possible from linking MoJ and NDTMS data (see Figure 11). The strongest, most certain, matches were those who matched on a one-to-one basis only (i.e. a single identifier from NDTMS data was linked with a single identifier from MoJ offending data). Other possible links involved: multiple identifier combinations from treatment matching to a single offending identifier; multiple offending identifiers matching a single treatment identifier and linkages where multiple treatment identifiers matched multiple offending identifiers.

Figure 11: Linkage types available



It was also considered important, where possible, to include some of the one-to-many and many-to-many matches to help limit any potential biases which could arise from only analysing one-to-one matches. As such, clients who were matched in these ways were re-examined to check if any links were uniquely made on the basis of Rule 1. If this selection reduced the match type to be a one-to-one match, then this link was retained in the final matched dataset and all other links were discarded.

One-to-many and many-to-many matches that did not uniquely identify under matching Rule 1 were not included in the final matched dataset as it was not clear which the correct match was. This could for example occur due to multiple people in treatment sharing all of the characteristics that are used to match the data.

The final matching analysis shows that of the 157,066 clients who commenced treatment in 2012, 52,022 clients (33.1%) had no recorded offence listed on the PNC. There were 80,887 clients (51.5%) matched on a one-to-one basis. In total, there were 24,157 (15.4%) individuals who had multiple matches and were stripped from further analyses: there were 17,808 cases (11.3%) where one MoJ identity linked to multiple NDTMS identities; 3,819 cases (2.4%) where one NDTMS identity linked to multiple MoJ identities, and 2,530 cases (1.6%) where multiple NDTMS identities linked to multiple MoJ identities.

Bias assessment

An initial assessment of bias that may have been induced by the matching procedure was conducted by comparing some high-level characteristics with the category of the match. Clients could have been in the 'no match' category, in the 'one-to-one' category or in the 'many' category (composed of the one-to-many, many-to-one and many-to-many categories). Clients falling into the 'many' category are, according to the NDTMS, disproportionately resident in London (Figure 12) and opiate clients (Figure 13). It is likely, in both instances, that because these clients are more likely to move residence they are more likely to pose a matching problem based on the available matching criteria.

Future work utilising the final matched dataset will need to examine methods in which to account for these differences, potentially using representative weighting or inverse probability weighting. For the present report, no weighting procedure was used.

Figure 12: Bias assessment of match based on region of residence

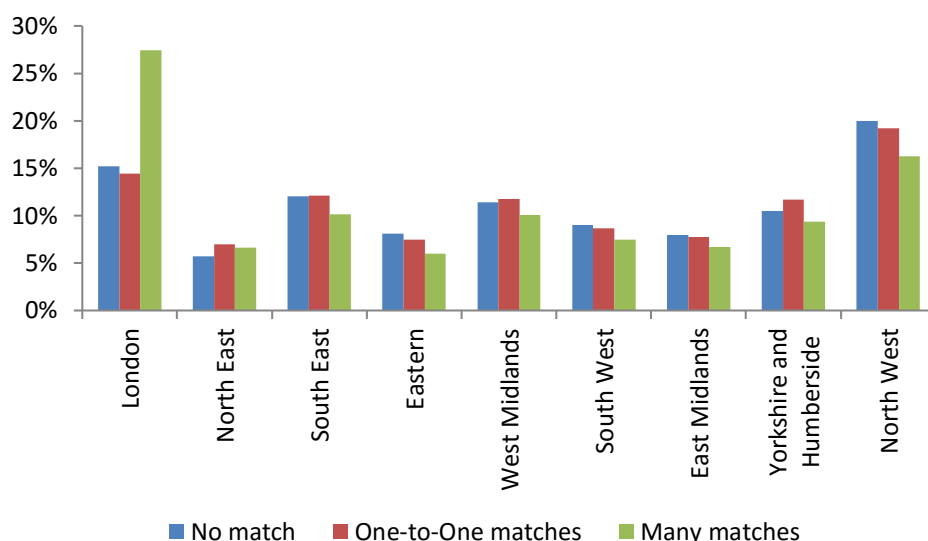
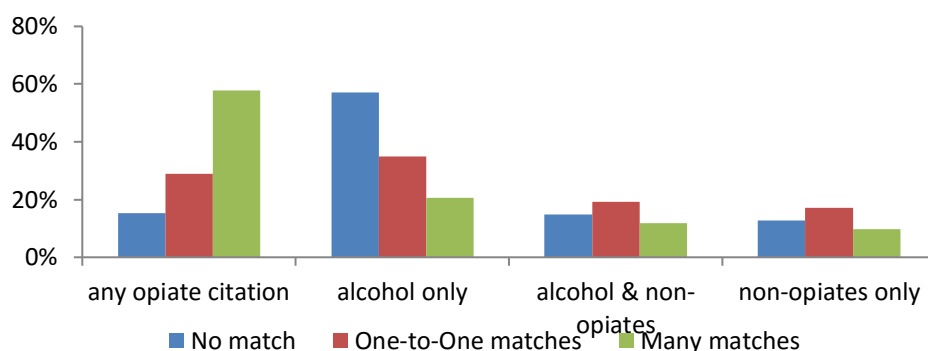


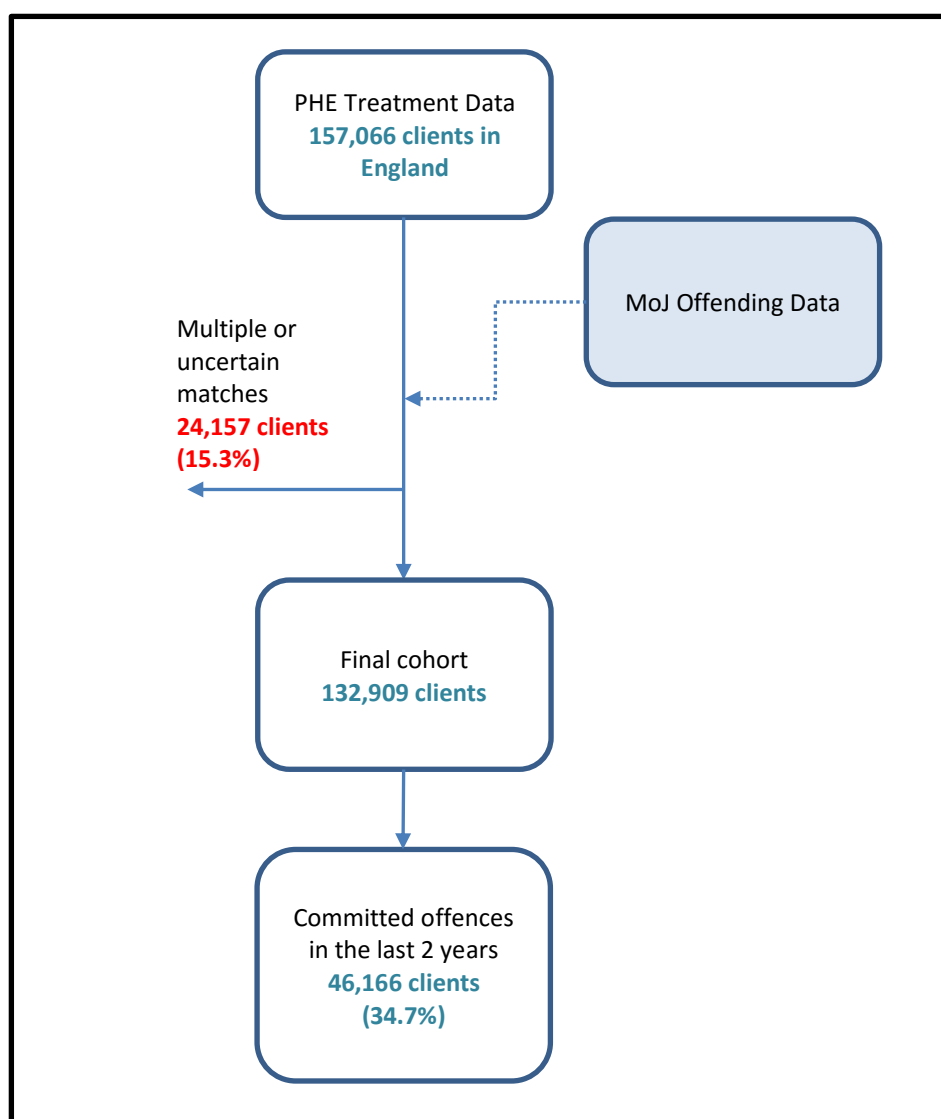
Figure 13: Bias assessment of match, based on substance category



Further refinement of the final matched dataset

Between 1 January and 31 December 2012, a total of 157,066 clients started treatment for alcohol or drug problems (see Figure 14). A total of 24,157 clients were removed due to uncertain linkages with offending data (see Section 4) which left 132,909 clients in the cohort. Of these, 46,166 had a recorded offending history in the two years prior to starting treatment.

Figure 14: Data flow diagram



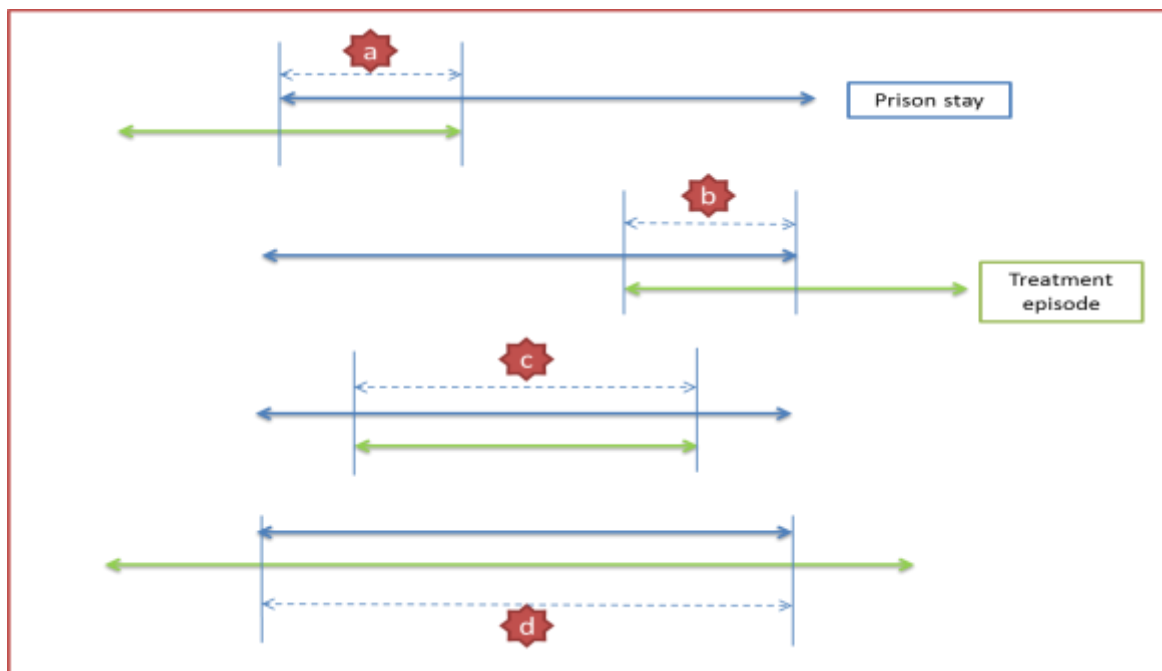
It was possible, however, that some links were spurious. By examining in detail the relationship between time in community based treatment and time in prison, there were four scenarios that merited further consideration (see Figure 16).

- **Scenario A** - client in prison before their community-based treatment recorded as completed;
- **Scenario B** - recorded treatment start date is before a client is released from prison;

- **Scenario C** - entire community-based treatment journey recorded as when client is in prison;
- **Scenario D** - client is not recorded as being discharged from treatment while they spend some time in prison.

Clients affected by these scenarios are maintained within the final matched dataset. This results in a peculiar instance where a person could have an offence recorded against them while they are recorded as receiving community-based treatment and being concurrently recorded as being detained in prison. Some of these scenarios are more likely than others. For this report, however, no adjustments to administrative records have been made due to these overlaps.

Figure 15: Inconsistencies between prison and community treatment spells



Caveats when using matched data

There are a number of caveats which should be considered when using and interpreting the matched data:

- The final matched cohort only includes drug and alcohol treatment participants who matched to offending data and therefore does not cover all drug and alcohol treatment participants in England.
- It was necessary to include a geographic variable (Local Authority from the NDTMS, Local Authority/Police Force Area from the PNC) to refine the matching process. These are, however, as recorded on administrative data systems and sometimes the LA of residence will be recorded on the PNC as where the offence was committed or where the police station or prison is located. This is more likely to have an impact on analysis in urban areas such as London where LAs are more tightly clustered.

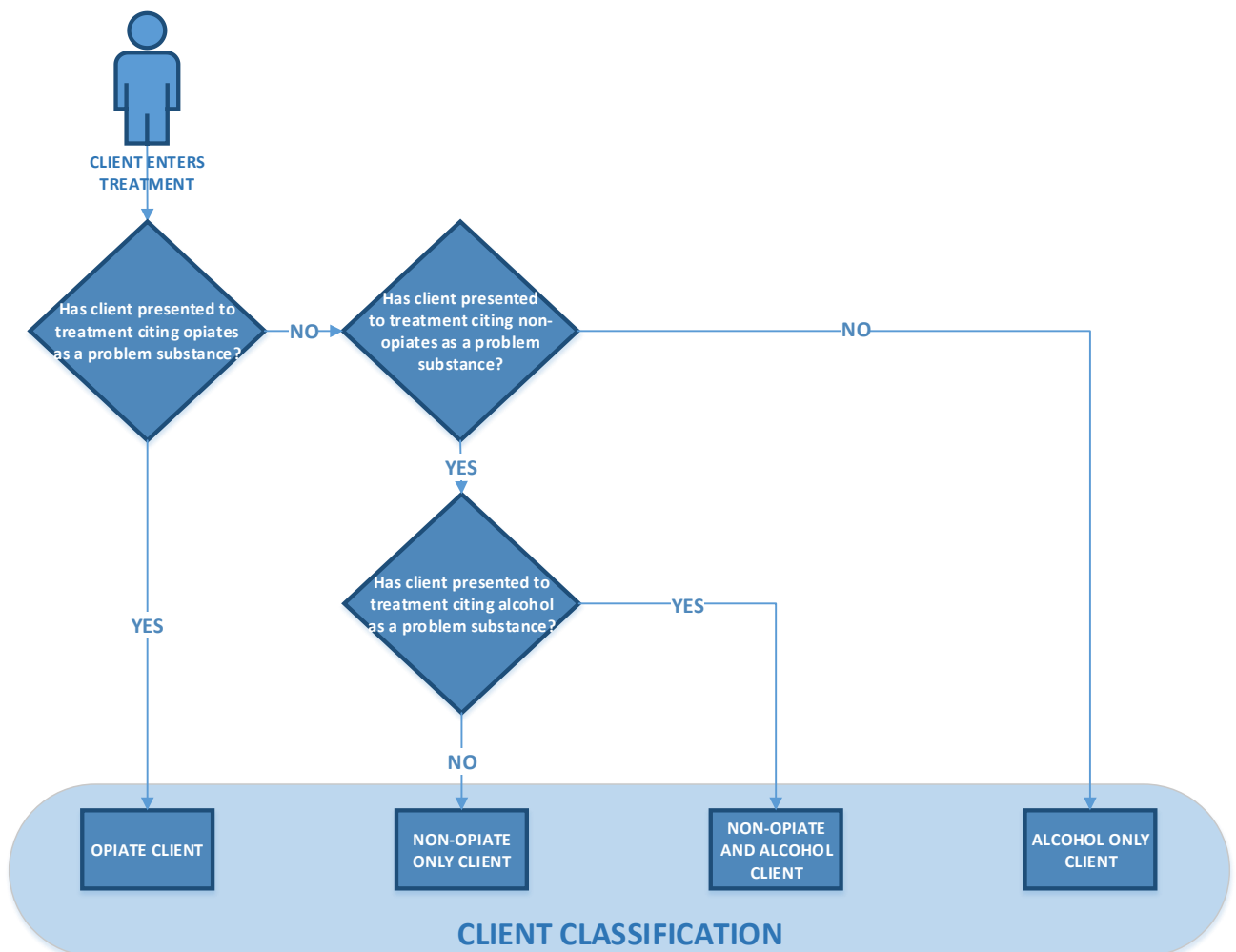
- It is possible that certain offences increase the likelihood of being caught, such as shoplifting compared to domestic violence. As the former is more likely to affect opiate clients and the latter more likely to affect alcohol clients, it is possible there are systemic issues giving an apparent difference in offending by substance misuse profile.
- No attempt to statistically adjust for characteristic differences between the original cohort and those in the final matched dataset utilised herein. Future work will need to formally assess any bias induced in this process and make reasonable adjustments to account for this.

Annex B – Client classification

Clients presenting to adult drug and alcohol treatment services are categorised by the substances they cite as problematic at the start of treatment (figure 16). They are categorised by the following hierarchal criteria:

- any mention of opiate use in any episode would result in the client being categorised as an OPIATE client (irrespective of what other substances are cited)
- clients who present with non-opiate substances (and not opiates or alcohol) will be classified as NON-OPIATE ONLY
- clients who present with a non-opiate substance *and* alcohol (but not opiates) recorded in any drug in any episode in their treatment journeys will be classified as NON-OPIATE AND ALCOHOL
- clients who present with alcohol and no other substances will be categorised as ALCOHOL ONLY

Figure 16: Classification of clients based on the substances they present to treatment for



Annex C - Glossary of terms

Community treatment – drug and/or alcohol treatment that takes place *outside of* prisons

LA – Local Authority

LOC – Local Outcome Comparator

MoJ – Ministry of Justice

NDTMS – National Drug Treatment Management System

PCC – Police and Crime Commissioner

PFA – Police Force Area

PHE – Public Health England

PNC – Police National Computer

Prison treatment – drug and/or alcohol treatment that takes place *in* prisons

SROI – Social Return on Investment

Annex D – Further information on PHE’s Social Return on Investment (SROI) tool

PHE are developing a Social Return on Investment (SROI) tool to aid Local Authorities to demonstrate the social and economic benefits of local investment in alcohol and drugs prevention, treatment and recovery interventions. A significant portion of this tool relies on proven offending data, to assess changes in offending behaviour following treatment and to estimate the number of people in sustained recovery (defined as leaving treatment free of dependency and not re-presenting to treatment and/or committing an alcohol/ a drug-related offence). These two fundamental components cannot be assessed without a data share in place. The methodology and content of the tool have been agreed with an advisory group made up of alcohol and drug commissioners, economists and health economists, and national policy leads within PHE and other government departments. The group have requested the tool is ready as soon as possible. The number of proven offences before, during and after treatment may be used as management information, subject to data quality, confidentiality and Official Statistics rules, at a national and Local Outcome Comparator (LOC) area. LOC areas are composed of the Local Authority plus the 32 most similar Local Authorities in terms of client complexity and outcome likelihood.

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Feedback

This is an experimental statistical release based on initial analysis of the MoJ-PHE data share. Feedback and ideas for further analysis would be welcomed through statistics.enquiries@justice.gsi.gov.uk and evidenceapplicationteam@phe.gov.uk

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